**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFPD 11-2, *Aircraft Rules and Procedures*. It establishes the USAF aircrew training program that supports Air Force objectives and is applicable to all units assigned to or gained by major commands (MAJCOMs) and applies to commanders, operations supervisors, and aircrews assigned or attached to all flying activities of these commands. Lead commands will publish guidance in the specific mission design series (MDS), 11-2 MDS specific vol. 1 and vol. 2, regarding CRM requirements, currency, tracking, and evaluation. If MAJCOMs publish supplements to AFI 11-290, the supplements will define implementation of CRM program, but may not be less restrictive. MAJCOMs will coordinate their supplements with HQ USAF/XOOT. This instruction establishes requirements for developing and managing tailored, mission-specific Cockpit/Crew Resource Management (CRM) training programs and requires CRM training for all Air Force aircrew members. MAJCOMs, field operating agencies (FOAs) and HQ USAF direct reporting units (DRUs) are responsible for establishing and managing their respective programs in accordance with this instruction. CRM programs are mandatory for aircrew members and historically have been geared toward the operational flying environment, the potential exists to adapt fundamental program principles to any task or functional area requiring cooperative or interactive time critical efforts. **Attachment 1** provides a glossary of references, acronyms, and terms used in this instruction. AF Form 4031, **CRM Skill Criteria Training/Evaluation Form** lists specific CRM skills which measure the effectiveness of CRM training.

Submit suggested improvements to this instruction on AF Form 847, **Recommendation for Change of Publication,** through training channels, to HQ/USAF/XOOT, 1480 Air Force Pentagon, Washington, DC 20330-1480. This is a new instruction replacing AFI 36-2243, Cockpit/Crew Resource Management Program. Requests for waivers to this instruction should be directed to **Chief Operations Training Division, HQ AF/XOOT, 1480 Air Force Pentagon Washington, DC 20332-1480, DSN 227-7706, Commercial (202) 697-7706, FAX DSN 225-1489, FAX Commercial (202) 695-1489.** MAJCOMs should accept another MAJCOM or Department of Defense (DoD) training only if: it meets the intent of this instruction, a source document is provided, and MAJCOM determines training is equivalent. This publication applies to the Air National Guard (ANG) when published in the ANGIND 2.

*SUMMARY OF REVISIONS*

This revision incorporates IC 2001-1 and replaces the term *discipline* with *flight discipline* in paragraph **6.1.4.** This revision also provides a definition for *flight discipline* in the Terms section in **Attachment 1**. The entire text of IC 2001-1 is at **Attachment 2**.  Changed or revised material is indicated by a bar (|).

*Section A—CRM Program Description*

**1.** The Air Force CRM program provides crewmembers with performance-enhancing knowledge and skills directly applicable to their roles in the aerospace mission of the Air Force. CRM training is a key component of a combined effort to identify and manage the conditions that lead to error. The CRM program begins with crewmembers' initial Air Force flying training and is continuously built upon throughout their operational careers. Training objectives will be tailored to the knowledge and skill level of the aircrew member. As the aircrew member becomes more proficient, CRM training should emphasize performance skills more than academic objectives. Lead commands define "crewmember" in terms of their own operational mission requirements.

    **1.1.  The CRM program goals are:**

        1.1.1.  Maximize operational effectiveness and combat capability.

        1.1.2.  Preserve Air Force personnel and material resources.

    **1.2.  CRM training will be designed and managed to accomplish the following objectives:**

        1.2.1.  Develop aircrew skills in recognizing and responding to the conditions that lead to aircrew error.

        1.2.2.  Develop aircrew proficiency in CRM skills.

**2.  Program Requirements.**

    **2.1.  Lead Command guidance will:**

        2.1.1.  Establish training frequency, required attendees, and method for tracking crewmember currencies.

        2.1.2.  Use CRM skills criteria, AF Form 4031, to establish the skills training/evaluation criteria.

    **2.2.  Each MAJCOM, FOA and DRU CRM training program must:**

        2.2.1.  Provide training to develop and improve CRM knowledge and skills based on paragraph **6.** and AF Form 4031.

        2.2.2.  Be updated annually to incorporate: "real-world" operational experiences, mishap data, research data, critiques, and flight evaluation trends.

        2.2.3.  Identify the process for gathering, analyzing and incorporating trend data from MAJCOMs into existing training and evaluation programs.

        2.2.4.  MAJCOM, FOA and DRU CRM managers will insure continuity of course content with AETC's introductory courses.

    **2.3.  CRM skills will:**

2.3.1.  Be integrated into flight briefings and debriefings.

2.3.2.  Be integrated into training syllabi.

2.3.3.  Be evaluated during initial qualification and recurring evaluations.

*Section B—Program Management*

**3.  Top-Level Direction.** Operational control of the content and delivery of Air Force CRM programs will rest within the MAJCOM, FOA and DRU operations directorates. MAJCOM, FOA and DRU safety and surgeon general directorates will act as advisors and respective subject matter experts to the MAJCOM, FOA and DRU operations directorates for providing input to course content and delivery. The USAF CRM Steering Committee standardizes CRM program requirements, terminology, and core syllabus. Each functional area using the CRM training concept must be represented on the USAF CRM Steering Committee. The committee will meet annually.

3.1.  **Steering Committee Membership:**

3.1.1.  HQ USAF director of operations training (XOOT Chair).

3.1.2.  HQ AETC/DOF.

3.1.3.  HQ ACC/DOT.

3.1.4.  HQ AMC/DOT.

3.1.5.  HQ AFSOC/DOT.

3.1.6.  HQ PACAF/DOT.

3.1.7.  HQ USAFE/DOT.

3.1.8.  ANG/XOO.

3.1.9.  HQ AFRC/DOT.

3.1.10.  HQ AFMC/DOV.

3.1.11.  HQ AFSPC/DOO.

3.1.12.  Air Force Academy Operations Support Squadron (34 OSS).

3.1.13.  War Fighter Training Research Division Armstrong Labs (AFRL/HEA) (advisor).

3.1.14.  HQ AFSC/SEF (advisor).

3.1.15.  Air Force Aerospace Physiology (AFMOA/SGOO) (advisor).

3.1.16.  Other technical advisors as required.

**4.  USAF CRM Working Group.**

4.1.  Action officers representing each of the members of the Steering Committee constitute the USAF CRM Working Group. The working group reviews program execution and policy issues and will meet as required. Mandatory topics will include Training Continuum, Standardization, and Research and Development needs. Working group members are:

4.1.1.  HQ USAF/XOOT CRM Program Manager (Chair).

4.1.2.  MAJCOM, FOA and DRU CRM program managers.

4.1.3.  MAJCOM CRM advisors (SE, SG, etc.--maximum two per MAJCOM).

4.1.4.  HQ AFSC/SEFF and SEPA representatives (technical advisors).

4.1.5.  HQ AFFSA/XOFD representative (technical advisor).

4.1.6.  AFMOA/SGOO (technical advisor).

4.1.7.  AFRL/HE (technical advisor)

4.1.8.  Other technical advisors as required.

5.  **MAJCOM CRM Programs.** Individual MAJCOMs, FOAs and DRUs manage their programs as follows:

5.1.  **CRM Program Manager.** Each MAJCOM, FOA and DRU will appoint a CRM program manager within their operations or equivalent directorate. This individual should be a rated officer whose primary duty should be the management of their MAJCOM's respective CRM training program. CRM program managers should attend CRM industry conferences to keep abreast of current CRM technology and practices. The program manager is responsible for:

5.1.1.  Ensuring Lead Command's AFI 11-2 MDS specific vol. 1 and vol. 2s provide CRM policy guidance.

5.1.2.  Implementing Lead Command CRM policy guidance.

5.1.3.  Ensuring each applicable CRM training phase (paragraph **8.**) is implemented and evaluated.

5.1.4.  The forwarding of AF Form 4031, trend data to CRM Instructors/Facilitators.

5.1.5.  Ensuring a system is in place to collect performance data (i.e. Stan/Eval trends (Skills criteria), mishap reports and HATRs, and Inspector General reports) and send to CRM instructors and facilitators.

5.1.6.  Evaluating contractor implementation of CRM program objectives. Where discrepancies are identified, initiate corrective actions.

5.1.7.  Ensuring Quality Assurance Representatives (QARs) and IGs have current evaluation guidance to evaluate CRM program objectives. Where discrepancies are identified, initiate corrective actions.

5.1.8.  Providing feedback to CRM Working Group regarding program status covering: Training Continuum, Standardization, and Research and Development needs.

5.1.9.  Interacting with MAJCOM, FOA or DRU CRM advisors (Safety, Aerospace Physiology, etc.) ensuring CRM training is effective and minimizes redundancies with other programs given by Safety, Aerospace Physiology, etc.

5.2.  **Command Steering Committees** . MAJCOMs, FOAs and DRUs may establish command steering committees to identify the most effective methods for delivering and administering CRM programs. Command steering committees identify the means and resources for effectively managing the CRM program. The MAJCOM, FOA or DRU commander for operations determines the appropriate Chair for their Steering Committee. These Steering Committees develop consolidated command posi-

tions on issues presented before the USAF CRM Steering Committee. Each MAJCOM, FOA and DRU CRM Steering Committee should include:

> 5.2.1.  Safety and aerospace medicine functional managers.

> 5.2.2.  Representatives of other functions as required (i.e., IN, LG, Operations, etc.).

*Section C—Program Development*

**6.  Core CRM Curriculum** . CRM knowledge and skill objectives will be tailored to fit the unique characteristics of each primary mission. Navy Aircrew Coordination Training (ACT) equivalent terms are in parenthesis.

> 6.1.  Managing Core Curriculum. CRM will be integrated into existing training programs to the maximum extent possible.

> > **6.1.1.  Situational Awareness. (Situational Awareness)** Includes knowledge and skill objectives for preventing the loss of situational awareness, skills for recognizing the loss of situational awareness, and techniques for recovering from the loss of situational awareness.

> > **6.1.2.  Crew Coordination/Flight Integrity. (Leadership and Assertiveness)** Knowledge and skill objectives covering the impact on aircrew performance of command authority, leadership, responsibility, assertiveness, conflict resolution, hazardous attitudes, behavioral styles, legitimate avenues of dissent, and team-building.

> > **6.1.3.  Communication. (Communication)** Includes knowledge of common errors, cultural influences, and barriers (rank, age, experience and position). Skills will encompass listening, feedback, precision and efficiency of communication with all members and agencies (i.e., Crewmembers, Wingmen, Weather, ATC, Intelligence, etc.).

> > **6.1.4.  Risk Management/Decision Making. (Decision Making)** Includes risk assessment, the risk management process, tools, breakdowns in judgment and *flight* discipline, problem-solving, evaluation of hazards, and control measures.

> > **6.1.5.  Task Management (Adaptability/Flexibility).** Includes establishing priorities, overload, underload, complacency, management of automation, available resources, checklist discipline, and standard operating procedures.

> > **6.1.6.  Mission Planning/Debrief (Mission Analysis).** Includes pre-mission analysis and planning, briefing, ongoing mission evaluation, and post mission debrief. Also, specific tools and techniques to be used in operational and training missions.

**7.  Supporting Information** . HQ AFSC, MAJCOM, FOA, and DRU safety staffs will screen mishap reports for human performance errors. This safety information should be available for use at all phases of CRM training, either as part of simulator scenarios or for CRM case studies. The safety mishap report information must be sanitized according to AFI 91-204, *Safety Investigations and Reports*. Current safety mishap "For Official Use Only" and sanitized "Limited Use" information will be provided to CRM program managers in a timely manner by command/unit safety staff(s) according to AFI 91-204. The safety mishap report information provided may be retained as part of the CRM training program active files until the training value is exhausted. The safety information will then be destroyed or returned to the safety staff that provided it.

**8.  CRM Training Phases.** Five phases follow crewmembers through their professional development. MAJCOM, FOA, and DRU participation in course development is essential to training effectiveness and smooth transition from one phase to the next. Each phase of training should prepare individuals to apply the knowledge and skills acquired in their specialty and motivate participants for the next phase of training. This training should utilize the most effective training methods and avoid simply lecturing to students. Video feedback should be used for debriefing. If video recordings or other feedback tools are used, they will be immediately destroyed or erased upon completion of the feedback session to encourage honest student inputs in a non-threatening learning environment. Integrate skills identified in AF Form 4031.

   **8.1.  Introductory or Awareness Training.** This may be a crewmember's first exposure to CRM. It is normally conducted in a formal training environment by AETC. Trainees learn standard CRM terminology and core concepts. Lesson plans will include a description of the building block approach to CRM training the individual will participate in throughout their operational career.

   **8.2.  Formal Training Unit (FTU)/Combat Crew Training School (CCTS) CRM Training.**  Students learn to apply knowledge and skills related to their assigned aircraft. Academic training is complemented during aircraft/simulator training. Emphasis should be placed on preflight planning, briefing, in-flight utilization, and debrief techniques for CRM. This should include a brief review of CRM core concepts paragraph **6.1.** Mission Oriented Simulator Training (MOST) sessions or other simulated or actual operational scenarios may be used as an integral part of CRM training. Evaluate students for technical expertise, as well as the skills based on the six core concepts. If aircrew training devices are not available, students should participate in group problem-solving exercises.

   **8.3.  Mission-Specific Continuation Training.** MAJCOMs, FOAs and DRUs are responsible for CRM continuation training. This training will reinforce the aircrew's CRM academic knowledge and refocus on skills to accomplish the mission. It also helps aircrews identify and respond to the conditions that lead to error.

      8.3.1.  Emphasize CRM skills in the mission qualification and continuation training programs so they become inseparable parts of operational practices.

      8.3.2.  Frequency for recurring CRM continuation training is defined in AFI 11-2 MDS specific vol. 1s. Lead commands are responsible for providing guidance to standardize CRM MDS specific training policy and requirements. All aircrew require Mission-Specific Continuation Training. Separating training by crew position should be avoided. However, it is not mandatory to conduct this training with a complete aircrew.

   **8.4.  Flight Instructor Training.** All flight and simulator instructors will complete instructor specific CRM training. This training will normally be accomplished as part of instructor upgrade program. Courseware must build upon the previous blocks of training, both to reacquaint candidates with CRM fundamentals and to maintain continuity of terminology and techniques. MAJCOMs, FOAs and DRUs develop courseware related to instructing and evaluating key skills that apply to command and aircraft-specific missions. Personnel may conduct this training at operational units, flying training units, or a combination, as required. Training will include, but is not limited to, proper use of AF Form 4031.

      8.4.1.  CRM instructors and evaluators must be highly proficient in all CRM skills, and be experts in the recognition, observation, and reinforcement of these skills as they are applied by aircrew members in a mission environment.

      8.4.2.  CRM instructor or evaluator training will be included into instructor upgrade programs.

**8.5.  Facilitator Training.** Formal CRM academic curricula must be delivered by a trained CRM facilitator. Facilitator training will include training in running exercises, structured crew observation, and effective academic feedback.

**9.  Data Disposition Schedule.** Data collected using AF Form 4031 must be retained for 6 months. After 6 months data may be destroyed. Disposition approval will be published in AFMAN 37-139 **Records Disposition Schedule**.

**10.  Forms Prescribed:** AF Form 4031, **CRM Skills Criteria Training/Evaluation Form** will be used for CRM skills training and CRM evaluation as prescribed in the MAJCOM supplement. The goal is to identify weak areas as trends to improve CRM training before incidents or accidents occur.

*NOTE:*

MAJCOMs, FOAs, and DRUs will determine the primary weapon system for all dual-qualified personnel and will ensure CRM training is oriented toward the primary weapon system.

ROBERT H. FOGLESONG,   Lt General, USAF
DCS/Air & Space Operations

**Attachment 1**

**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION**

*References*

AFI 11-403, *Air Force Aerospace Physiological Training Program*

AFI 91-204, *Safety Investigations and Reports*

AFMAN 11-210, *Instrument Refresher Course(IRC) Program*

OPNAV Instruction 1542.7B

*Abbreviations and Acronyms*

**ATD**—Aircrew Training Device

**CRM**—Cockpit/Crew Resource Management

**DRU**—Direct Reporting Unit

**FOA**—Field Operating Agency

**HATR**—Hazardous Air Traffic Report

**MAJCOM**—Major Command

**MOST**—Mission Oriented Simulator Training

**SA**—Situational Awareness

*Terms*

**Cockpit/Crew Resource Management (CRM)**—The effective use of all available resources--people, weapon systems, facilities, and equipment, and environment -- by individuals or crews to safely and efficiently accomplish an assigned mission or task. The term "CRM" will be used to refer to the training program, objectives, and key skills directed to this end. MAJCOMs may implement their programs as either "cockpit" or "crew" resource management based on their respective missions.

**Communication**—The act of sharing information with others to cause some kind of action: to direct, to inform, to question, or to persuade.

**Crew**—As used in this instruction, any collection of Air Force personnel who routinely work together to accomplish an Air Force mission. For example, an air task order-designated team of fighter pilots and airborne battle managers prosecuting an interdiction mission uses "crew" skills to maximize its effectiveness.

**Crew Coordination**—As used in this instruction the act of working with all the members of the crew to accomplish the tasks of the mission.

**Decision Making**—The ability to choose a course of action using logical and sound judgment based on available information.

**Flight Discipline**—The judgement and actions exercised by AF personnel to adhere to the spirit, intent, and written word of governing guidelines in the presence of temptation to do otherwise, while executing

the Air Force flying mission. It also includes the prioritization of tasks based on crew responsibilities to ensure safe mission accomplishment while demonstrating the highest degree of integrity in the performance of flight duties.

**Flight Integrity**—Utilizing all the members of a flying package to accomplish the mission at hand.

**Mission Debrief**—Reviewing and discussing mission accomplishment looking at what was achieved, what barriers were encountered and how the mission could be accomplished better next time.

**Mission Oriented Simulator Training (MOST)**—Training presented as a part of a CRM program in a realistic, operationally-based simulator environment in real time.

**Mission Planning**—Taking all of the information for a mission and developing short term, long term, and contingency plans to coordinate, allocate, and monitor crew/flight and aircraft resources. Effective planning leads to flight conduct that removes uncertainty, increases mission effectiveness and enhances safety.

**Risk Management**—Logic-based, common sense approach to making calculated decisions on human, material, and environmental factors before, during, and after Air Force mission activities and operations, i.e., on- and off-the-job.

**Situational Awareness (SA)**—In flying, this refers to a aircrew member's continuous perception of self and aircraft in relation to the dynamic environment of flight, threats, and mission, and the ability to forecast, then execute, tasks based upon that perception.

**Skills Criteria**—Defined skills used as the basis for operational training and evaluation. The characteristics of the skill are that they are easily identifiable and offer consistency in grading evaluation.

**Task Management**—The ability to alter a course of action based on new information, maintain constructive behavior under pressure, and adapt to internal and external environment changes.

**Attachment 2**

**IC 2001-1 TO AFI 11-290, COCKPIT/ CREW RESOURCE MANAGEMENT
TRAINING PROGRAM**

**11 APRIL 2001**

*SUMMARY OF REVISIONS*

This interim change (IC) 2001-1 replaces the term *discipline* with *flight discipline* in paragraph **6.1.4.** This change also provides a definition for *flight discipline* in the Terms section in **Attachment 1**.

**6.1.4. Risk Management/Decision Making. (Decision Making)** Includes risk assessment, the risk management process, tools, breakdowns in judgment and *flight* discipline, problem-solving, evaluation of hazards, and control measures.

**Attachment 1**

**Terms** shall have the following definition added:

**Flight Discipline** -- The judgement and actions exercised by AF personnel to adhere to the spirit, intent, and written word of governing guidelines in the presence of temptation to do otherwise, while executing the Air Force flying mission. It also includes the prioritization of tasks based on crew responsibilities to ensure safe mission accomplishment while demonstrating the highest degree of integrity in the performance of flight duties.